NASA **MARSHALL STAR**

Marshall Space Flight Center **April 5, 2001**

'We bring people to space — We bring space to people'

Shuttle turns 20

Marshall employees remember thrill of first launch

by Lynnette Madison

When Space Shuttle Columbia lifted off on its historic first flight the morning of April 12, 1981, John Newton remembers "the toughest thing I ever had to do was stay seated in my chair at launch control" at Kennedy Space Center, Fla.

"Just before launch, the launch director reminded us we were professionals — and we needed to remain calm and stay seated," recalls Newton, then the project representative for the External Tank program at the Marshall Center.

"You could feel the electricity — the excitement in the air," remembers Newton, today the team lead for the Solid Rocket Booster Program at Marshall. "As the Shuttle lifted off, you could tell everyone wanted to jump up for a better look. I don't know how we stayed seated, but we did."

To mark the anniversary of that first launch, STS-1 Commander John Young and Pilot Robert Crippen will be special guests at the Marshall Center April 24. At the celebration — from 10 a.m. to 1 p.m. for all Marshall employees, retirees and contractors — the astronauts will share their STS-1 reminiscences, participate in a ceremony to cast their footprints as part of Marshall's "Footprints to the Future" collection, and autograph a plaque to be displayed with a retired Shuttle Main Engine.

Columbia lifts off on STS-1

Vivid recollections of that early April morning in 1981 abound. Marshall Center engineer Jack Hengel was on the people-packed Cape Canaveral causeway six miles away. "I remember seeing the plume generated by the solids — the Solid Rocket Boosters — and then the Shuttle just shot off the pad. I didn't expect such a rapid liftoff. I was used to watching the slow, lumbering liftoffs of the Saturn rockets," says Hengel, now manager of the Solid Rocket Booster Recovery System.

Marshall's Space Shuttle Projects Office is responsible for the first eight-and-a-half minutes of each Shuttle launch. During those crucial 510 seconds, the Reusable Solid Rocket Motors generate enough energy to power 87,000 homes for a full day, the Solid Rocket Boosters accelerate the Shuttle to 3,000 mph (4,828 kilometers per hour), the External Tank feeds 535,000 gallons

*See **Shuttle** on page 5*

Marshall Center is last stop before launch for repaired, upgraded Space Shuttle antennae

by Debra Valine

The Marshall Center has something few organizations have — large thermal vacuum chambers. That, along with customer service, is why Kennedy Space Center sends its Ku-band antennae to Marshall's Environmental Test Facility for acceptance testing before putting the antennae back in service after repairs or upgrades.

NASA's Shuttle fleet has six of these Ku-band antennae — valued at approximately $15 million each. And last week, two of them were in Marshall's Environmental Test Facility.

The antenna deployed assembly provides communications and video uplink and downlink for the Space Shuttle while on orbit. The antennae have been in use since STS-7 in 1983. They are carried to space in the Shuttle payload bay and deployed once the Shuttle is on orbit. Each antenna is installed on a Space Shuttle and stays with that Shuttle until the antenna fails. It is then repaired at the NASA Shuttle Logistics Depot at Kennedy before coming to Marshall for acceptance testing.

"We provide the facility and the thermal vacuum expertise," said Freida Lowery, team lead at the Environmental Test Facility. "United Space Alliance and The Boeing Company from Kennedy Space Center in Florida bring the hardware and test requirements."

"Marshall has a long-standing relationship with United Space Alliance, Boeing and Kennedy Space Center for thermal vacuum acceptance testing of these antennae after repairs or modifications have been made," said Debra Terrell, schedule administrator for the Environmental Test Facility. "This is the first time we have ever had more than one in our facility."

While at Marshall, each antenna is tested in the Sunspot Thermal Vacuum Chamber, which simulates the space environment. Ai Signal Research Inc. technicians conduct the tests in the NASA facility. "We simulate as closely as possible the environmental conditions the hardware will experience on orbit," Lowery said.

Photo by Danny Reeves, NASA/Marshall Space Flight Center

Technicians lift the Ku-band antenna into the Sunspot Vacuum Chamber in the Environmental Test Facility.

"One of the antennae — DA102 — failed in flight on the 3A flight in October due to a bad transistor in the deployed electronics assembly," said John Ragley, an avionics test engineer with United Space Alliance. "The second one is a spare that had some intermittent phase lock problems — it wouldn't track. DA102 also has phase lock problems. These were identified during this screening at Marshall. The other antenna passed acceptance testing.

"DA102 has a reworked deployed electronics assembly that just got done with solder rework and this is a screening to make sure the solder joints are good in the space environment," Ragley said. "We bring the antennae here for testing because these guys have the knowledge, experience and facilities to support our testing and meet the launch schedules. We've been testing the Ku-band antennae at Marshall's Environmental Test Facility since 1996. We have a good working relationship with the crew."

In addition to providing the communications and video downlink and uplink to the Tracking and Data Relay Satellite Network while the Shuttle is on orbit, these antennae provide the rendezvous radar for hooking up with things that are already flying out there — such as satellites or the International Space Station.

All communications and video signals are beamed back through White Sands, N.M., and then are relayed to anyone else who needs the information, such as the Payload Operations Center at Marshall.

The Environmental Test Facility team provides simulated environments for development, qualification, acceptance and research testing of space flight hardware. The facility in Bldg. 4619 provides the capability for thermal vacuum, vacuum bakeout, optical cleanliness bakeout, thermal humidity and thermal altitude environmental testing.

The facility has 15 thermal vacuum chambers, nine thermal humidity chambers, one thermal altitude chamber and two 10K clean rooms. The largest vacuum chamber, V20, is 20 feet in diameter by 28 feet long, and capable of testing 15-ton test articles. The smallest chamber is a 2-foot by 2.5-foot bell jar.

The testing services are available to all NASA organizations, other U.S. government entities, educational researchers and commercial customers.

For more information about the Environmental Test Facility, call Freida Lowery at 544-2507.

The writer, employed by ASRI, is the Marshall Star editor.

★ ★ ★
Marshall Stars
★ ★ ★

Michael Tinker named AIAA associate fellow

Dr. Michael L. Tinker, a structural dynamicist in Marshall's Engineering Directorate, has been awarded the membership status of associate fellow in the American Institute of Aeronautics and Astronautics (AIAA).

Tinker

Tinker has been employed at Marshall since his graduation from Auburn University's Aerospace Engineering Department in 1989. He has been involved with many space flight and research projects, including Hubble Space Telescope, International Space Station, reusable launch vehicle technology and lightweight deployable space structures.

Recently Tinker's efforts have focused on inflatable structures technology and test methods for International Space Station hardware. He has received two NASA Technical Innovation Awards for his research, as well as numerous other awards.

He has been a member of AIAA for more than 18 years, having joined the Auburn University student branch in 1982. He has been very active in the organization, having attended and assisted in the planning of numerous technical conferences. He was general chair of the 2000 Dynamics Specialists Conference, and was technical program chair of the same conference in 1996. Tinker became vice-chair of the national

Structural Dynamics Technical Committee in 1999, and will become chair in 2002. He has also been a member of the national Adaptive Structures Technical Committee for the past three years.

Tinker has authored more than 40 technical publications, including journal papers, conference papers and various NASA publications.

Associate fellows have accomplished or been in charge of important engineering or scientific work, or done work of outstanding merit or otherwise made outstanding contributions to the arts, sciences or technology of aeronautics or astronautics. Nominees must be AIAA senior members and have at least 12 years of professional experience.

'NASA Government Invention of the Year 2000' selected

NASA release

The Optical Fiber Cable Chemical Stripping Fixture invented by John Kolasinski and Alexander Coleman, from Goddard Space Flight Center in Greenbelt, Md., has been selected as the winner of the NASA Government Invention of the Year for 2000.

The invention is used to remove coatings surrounding tiny, as small as 125 microns, optical fibers. Fiber coatings, such as acrylate and polyimide, surround the glass fibers similar to the way insulation covers a copper wire. The device prepares optical fibers for termination to a connector by controlling the removal of the coating. The fixture also provides control over the stripping length.

"Optical fibers are used for very fast communication links between electronic devices," said Kolasinski, a senior aerospace technology engineer at Goddard. "A major benefit of the fixture is that it increases reliability over mechanical techniques that nick fibers, saving time and money by reducing repair and replacements."

Coleman, a senior electronics technician in the Electrical Systems Branch at Goddard's Wallops Flight Facility, Wallops Island, Va., said traditional coating removal techniques are based on mechanical wire stripping techniques that may scratch or nick the very small glass fiber, resulting in a latent defect and a reliability issue.

"Using this fixture decreases the likelihood of optical fiber failures caused by nicks induced by mechanical stripping methods," added Coleman. "It could also benefit others by helping to reduce optical fiber failures in connectors used for systems such as those in the telephone or the Internet. Anyone that builds fiber optic cables could use the device."

Estimates indicate that with today's telecommunications revolution, close to 200 million feet of fiber-optic cable are installed each year at a typical cost of $30 per foot.

The fixture has been used successfully on a number of NASA projects including the X-ray Timing Explorer (XTE), the Tropical Rainfall Measuring Mission, the Microwave Anisotropy Probe, Earth Observing-1 and the Hubble Space Telescope's solid state recorder.

The RIFOCS Corp. in Camarillo, Calif., has already purchased the license from NASA to use this device in their in-house programs. Other companies that work with certain types of fiber optic systems also are looking at obtaining a license.

The winners will be honored at the Invention of the Year Award ceremony scheduled for 10 a.m. EDT May 4, at NASA Headquarters, 300 E. St. SW, Washington, D.C.

Photo by Emmett Given, NASA/Marshall Space Flight Center

Hello Marshall

Joel Ruble, a student at Lee High School in Huntsville and a participant in Marshall's Future Assets, Student Talent (FAST) program, tries on a glove at the Microgravity Science Glovebox Facility. Ruble and other students toured the Microgravity Development Lab Friday.

New scanner helps the search for Shuttle tile flaws

Ames release

NASA workers who face the critical and often tedious task of evaluating damage to the Space Shuttle's protective thermal tiles now have some high-tech help in the form of a new portable, digital inspection system.

Engineers from the Ames Research Center in Moffett Field, Calif., and The Boeing Company in Huntington Beach, Calif., recently delivered a hand-held laser scanner to Kennedy Space Center in Florida evaluation.

The Shuttle's thermal tiles protect the orbiter and its crew from temperatures ranging from minus 250 degrees Fahrenheit in space, to nearly 3,000 degrees Fahrenheit during the superheated reentry. After each flight, every one of the more than 24,000 tiles that cover the Shuttle's surface must be inspected.

"Tests at Ames and at Kennedy have demonstrated the scanner's ability to measure surface flaws on thermal-protection tile and blanket samples," said Ames senior project engineer Joseph Lavelle.

The scanner uses a digital camera and lasers in a measurement technique called laser triangulation and is the first step toward the development of an Electronic Inspection and Mapping System that could aid the evaluation of the Shuttle's Thermal Protection System.

"This new scanner, along with the rest of the Electronic Inspection and Mapping System currently in development at Kennedy, could increase the accuracy and reliability of our damage measurements," said Suzy Cunningham, Kennedy's Thermal Protection System project manager. "The system could make the inspection process more efficient, which could eventually reduce vehicle turn-around time. Tile inspection is a very time-consuming process."

The hand-held instrument is a 5-by-9-inch box that, when placed over a tile, measures flaws within a 3-by-3-inch area. The scanner sends the data to a laptop computer. The software locates and characterizes the damage and generates a 3-D image, indicating the size and depth of the flaw.

The system also contains a database of tile fabrication and maintenance information for every tile on the orbiter being measured. The latest Thermal Protection System information and updates for each of NASA's four Shuttles can be downloaded from a computer as required.

"A major challenge has been reducing the size of the system so it fits into small areas, such as those around the scaffolding that surrounds the orbiter during its post-landing maintenance," noted Lavelle. "With input from Kennedy engineers and United Space Alliance technicians, we have been very aggressive about making the scanner smaller."

The software also offers technicians various repair options. "Our California developers are writing software that integrates systems developed by Ames, Boeing Florida Operations at Kennedy, and Boeing-Huntington Beach," said Claudia Silverman, Boeing project manager at the Huntington Beach facility. "We are proud of the product and the team effort."

Lavelle said this electronic inspection technology also may have applications in other fields, such as integrated circuit inspection and in any manufacturing process that requires high accuracy.

"With the first phase of this project completed, we have already seen tremendous teamwork between NASA's field centers and the contractors," added Cunningham. "This is a clear indication of the cooperation we'll see as we develop a complete system."

Shuttle

Continued from page 1

(202.5 deciliters) of liquid propellants to the Main Engine, and inside the combustion chambers of Shuttle's three main engines temperatures are hot enough to melt steel.

For the Marshall Center, the launch of Columbia was the zenith of more than 10 years' work and the beginning of a new era in space travel: One that foresees the Space Shuttle transporting crew, equipment and experiments to the International Space Station into the year 2012 — and perhaps beyond.

However, during the 1970s, the Space Shuttle and its major propulsion elements — the Main Engine, Solid Rocket Boosters, External Tank and Reusable Solid Rocket Motors — were little more than an idea. The Marshall Center was chosen for the preliminary studies and development of the Shuttle's major propulsion elements.

"The Shuttle remains the most unique spacecraft ever built. There is no other with reusable boosters and engines and none with better performance," says Alex McCool, manager of Marshall's Shuttle Project office and a member of the original Shuttle team.

The Shuttle posed a number of technical challenges for Marshall engineers, says McCool. First, the Orbiter required a highly efficient propulsion system. Secondly, the Shuttle had to be reusable.

"I remember one problem — on the main oxidizer valve — that took almost a year to solve," says George Hopson, manager for Marshall's Space Shuttle Main Engine Project. "Every time we tested the engine we took a chance at burning it up. It was the biggest obstacle we faced, and we knew we had to resolve it quickly to meet the first launch schedule."

The External Tank was another design challenge. It had to be strong, lightweight, hold 1.6 million pounds (725,000 kilograms) of propellant, and — because it would not be reusable — costs had to be kept down. Marshall drew on its experience with the Saturn V rocket.

The result: The External Tank stands 154 feet tall (49.6 meters) and 27.6 feet (8 meters) wide, withstands the thrust loads of 7 million pounds (3.2 million kilograms) with a skin thickness of only 0.25 inches (0.65 centimeters).

Design of the Solid Rocket Boosters was driven by the need for high thrust and reusability. "Initial specifications called for motor case segments that could be used 20 times, but we wanted more," says Parker Counts, manager of Marshall's Solid Rocket Booster project. Marshall engineers opted for a weld-free case formed by a continuous flow-forming process.

One of the biggest challenges for the Solid Rocket Booster team was that it had no way to test its recovery system. Because of the size and weight of the boosters, there was no aircraft that could carry that much weight aloft.

The first launch proved the system that Marshall engineers developed worked. The boosters floated to Earth beneath the world's largest parachutes.

The Marshall Center also coordinated Shuttle test activities. Test stands and equipment that had stood idle since the Saturn era were revived and remodeled to support Shuttle test efforts.

"Marshall met the challenge of developing durable space hardware that could be recycled for many missions," says McCool. "It is a remarkable tribute to the dedication of our team in the most trying of political times — in the post-Apollo era when the nation turned away from the space race."

Today, the Marshall Center continues to manage those first eight-and-a-half minutes of a Space Shuttle's launch. "Attention to launch safety requires attention every minute of every day," says McCool. "The Shuttle will continue to keep pace with advances in technology. Upgrades to its propulsion system have made it safer, more streamline and more cost-effective."

More enhancements are planned within the next five years, including adding an advanced health management system that will monitor the "health" of the Shuttle's Main Engine.

Each new technology makes space travel safer and delivers new products — from healthcare to computers — into the everyday lives of people here on Earth.

After the first Shuttle launch, STS-1 Pilot Robert Crippen, succinctly summed up the development of the Shuttle and his launch experience: "We just became a whole lot smarter."

The writer, employed by ASRI, supports the Media Relations Department.

STS-1 celebration lunch tickets now on sale

Marshall team members are invited to a celebration April 24 to mark the 20th anniversary of the first Space Shuttle mission.

Marshall employees, on-site contractors and retirees will welcome special guests, STS-1 Commander John Young and Pilot Robert Crippen. The celebration will be held from 10 a.m. to 1 p.m. in the North Structure of Bldg. 4752 and at the nearby Marshall picnic area.

In addition to a host of other celebration activities, lunch will be served in the Marshall picnic area from 11 a.m. until noon.

There is no charge to attend any of the celebration activities. However, those planning to attend may wish to purchase a meal ticket for $3.50 each, for a choice of barbecue sandwich or garden salad. The meal will also include chips, a drink and an opportunity to enjoy a slice of STS-1 celebration cake after lunch.

Tickets will be available through April 19 from administrative officers or at the NASA Exchange in Bldg. 4752.

Space Flight Awareness Honorees

Marshall employees, contractors to be honored at Smithsonian

Twenty-six Marshall employees and contractors will be honored April 12 during events in Washington, D.C., to mark the 20th anniversary of the first Space Shuttle flight.

The honorees will be recognized at a reception at the National Air and Space Museum.

Sam Ayala, Sverdrup Technology

Everett E. Beam, TD12

Melvin R. Carruth Jr., ED31

John S. Chapman, MP41

Patricia S. Fundum, AD41

Paul Gilbert, FD31

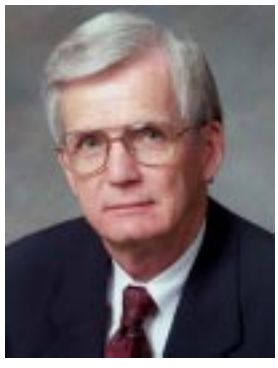
Seldon Lee Harp, RS20

Joe Howell, FD02

Bobby J. Johnson, SD43

Danny Johnston, ED40

Mike Kearney, FD40



Clifton A. Kirby, FD27

Willie J. Love, OS01

Allan H. McCaleb,
New Technology Inc.

Walter R. McIntosh, ED12

John W. McPherson,
Hernandez Engineering Inc.

William S. Mitchell, Pratt &
Whitney Liquid Space Propulsion

William Neill Myers, TD62

Emil L. Posey, PS40

Mark Richards,
Lockheed Martin ITS

Ron Sparks, Bionetics

Douglas Towne,
Lockheed Martin ITS

Angelia Walker, QS21

Brantley Whitt, SD71

Thomas Williams, MP51

Walt Williams, New
Technologies Inc.

Administrator begins his 10th year at NASA

NASA release

During his tenure, NASA Administrator Dan Goldin has been one of the most influential leaders in the agency's history. In March, Goldin reached what may be his most significant milestone, NASA's longest-serving administrator. This week, he begins his 10th year in the front office.

After joining NASA in 1992, Goldin pioneered a revolution to transform America's aeronautics and space program. His "faster, better, cheaper" approach has enabled the space agency to deliver valuable programs during a time of declining budgets, without sacrificing safety.

Goldin

Within the past two weeks, Goldin's legacy of outstanding leadership has been honored with three prestigious awards.

Recognized as one of the visionary leaders in minority higher education, the administrator received the Federal Leadership Award from the National Association for Equal Opportunity in Higher Education.

The Metropolitan Washington Chapter of the ARCS Foundation, an organization dedicated to filling the nation's need for scientists and engineers, honored Goldin with the 2001 Eagle Award.

Goldin also received this nation's premier space award, the Dr. Robert H. Goddard Memorial Trophy, from the National Space Club. "I am both honored and humbled by this award," Goldin. "This validates and supports NASA's continuing mission to pioneer the frontiers of space and knowledge in order to achieve a safer, more secure, and more fulfilling life here on Earth."

Before coming to NASA, Goldin was vice president and general manager of the TRW Space and Technology Group in Redondo Beach, Calif. During a 25-year career at TRW, Goldin led projects for America's defense and conceptualized and managed production of advanced communication spacecraft, space technologies and scientific instruments.

He began his career at NASA's Lewis Research Center in Cleveland, Ohio, in 1962, and worked on electric propulsion systems for human interplanetary travel.

Health Tips

There are ways you can prevent back injuries

Editor's note: *The following safety and health information is intended as a refresher awareness session and is in no way a substitute for job training nor proper equipment use.*

Your backbone is made up of 24 individual bones called vertebrae that are stacked on top of one another. Your vertebrae are separated by soft discs of cartilage that perform as shock absorbers for your vertebrae, and also help your back to bend, twist and move around. Most of the support to your spine is maintained by your stomach muscles, as well as the many muscles and ligaments that run up and down the length of your back.

Prevention is the best medicine

Preventing a back injury is much easier than repairing one. Because your back is critically important to your ability to walk, sit, stand and run, it's important to take care of it. Most back pain arises from using your back improperly, so learning a few basic rules about posture and proper exercise can help keep your back in good shape.

Exercise to strengthen your back, reduce stress

Having strong back and stomach muscles is important to ease the work your back is put through each day. By doing simple back-toning exercises, you not only strengthen your back but also reduce stress and improve your appearance, too. Check with your doctor or the NASA Exchange exercise personnel as to the best exercises for you.

Lose weight

Pot bellies and being overweight exerts extra force on back and stomach muscles. Your back tries to support the weight out in front by swaying backwards causing excess strain on the lower back muscles. By losing weight, you can reduce strain and pain in your back. Check with your doctor or the Exchange exercise personnel for the most sensible diet plan for you.

Maintain good posture

You can prevent many back pains by learning to sit and stand correctly. When you sit down, don't slouch. Slouching makes the back ligaments, not the muscles, stretch and hurt, thus putting pressure on the vertebrae. The best way to sit is straight, with your back against the back of the chair with your feet flat on the floor and your knees slightly higher than your hips. Learn to stand tall with your head up and shoulders back.

For training, call the Marshall Fitness Center at 544-7571.

TBE engineer combines vacation with NASA mission

by Debra Valine

Lots of people vacation with family. But when one engineer with Teledyne Brown Engineering vacations, he takes his knowledge of the International Space Station with him and shares it with schoolchildren.

Robert Szeremi, who is an EXPRESS payloads adviser for the Marshall Center, spent two weeks in March visiting relatives in Italy and Hungary. While there, he visited four different schools and spoke to more than 20 different classes ranging from elementary to high school students. He also spent a week skiing in France with former exchange students and relatives.

Szeremi, who spoke to students in Italian, Hungarian and English, discussed the importance of the Space Station, and the impact the international effort has had on enhancing global pride and raising space awareness for the international community.

"Working on the International Space Station is a wonderful opportunity to work on a truly multi-national space project with countries that, until very recently, were at war with each other," said Szeremi, who was born in Budapest, Hungary, and raised in Italy and the United States. He moved to a farm north of Detroit, Mich., on March 25, 1947, which was his eighth birthday.

He spoke at an Italian school March 7 — the day before Space Shuttle mission STS-102 launched.

"This was an especially momentous occasion for Italy," Szeremi explained, "because it was the first flight of the Italian-built Multi-Purpose Logistics Module Leonardo." The logistics module is one of three being used onboard the Space Shuttle to transport supplies and materials between Earth and the Space Station. The modules have also been designed to operate on-orbit while docked to the Space Station to provide active and passive storage and an inhabitable pressurized space to two people.

Szeremi described to the students the differences in the crew makeup, and explained to them that one of the new female crewmembers on the Space Station is American Susan Helms.

"The students wanted to know how astronauts and cosmonauts used the bathroom in space, and what they got to eat," he said. "The response from the students was wonderful, and the teachers and students alike took keen interest in the information presented to them."

> ***'This was an especially momentous occasion for Italy because it was the first flight of the Italian-built Multi-Purpose Logistics Module Leonardo.'***
>
> ***— Robert Szeremi***

Marshall's Public Inquiries Department of the Customer and Employee Relations Directorate provided Szeremi with space flight CDs and informative handouts for the students. He speaks to European classes periodically, and also sponsors a French exchange student each summer. He is the area coordinator for a program committed to broadening the international world for students.

Szeremi has been working as an adviser on the EXPRESS payloads since 1992, but he got his start at Teledyne Brown working on the Spacelab missions in 1982, after he retired from the U.S. Army.

The writer, employed by ASRI, is the Marshall Star editor.

Courtesy photo

Robert Szeremi enjoys sharing information about the International Space Station with students.

Retirees honored

Marshall's annual dinner takes on a new style

Employees showcase singing talents

The Marshall Center's 15th annual dinner honoring retirees was held March 15 at the Von Braun Center in Huntsville.

This year's event took on a different style. Employees sang songs rather than performing skits as in past years.

"We decided it was time to change the format for the retiree dinner," said Edwina Bressette, who chairs the retiree dinner each year.

Photos by Doug Stoffer, NASA/Marshall Space Flight Center

Retirees, Marshall employees and contractors use the event to catch up with friends.

Calvin Drake sings "I Believe I Can Fly."

Sharon Hancock performs "A Dream is a Wish Your Heart Makes."

David Jeffreys gives his rendition of "The Dance."

The Marshallaires barbershop quartet sings a musical medley.

Jim Kennedy, Marshall Center deputy director, talks to the audience.

Center Director Art Stephenson, right, and former director Dr. William Lucas enjoy the evening.

Rob Champion and Linda Law blend their talents in "Wind Beneath My Wings."

Luis Trevino, on trumpet, and his band Latin Rhythms, perform a soft jazz selection.

Edwina Bressette thanks performers for a wonderful job.

Great Moonbuggy Race

NASA employees, retirees and their family members may use the "get into the Space & Rocket Center free" policy to attend the Great Moonbuggy Race Friday and Saturday. If NASA employees have not already received a pass badge for the Space & Rocket Center, those employees should go to the information center in the lobby and show their NASA badge. For details, call 544-2000 or see: moonbuggy.msfc.nasa.gov

History chats

Marshall retiree George Harsh will present the first of two history chats celebrating the 20th anniversary of STS-1 at 11:30 a.m. April 11 in the Heritage Gallery in Bldg. 4203. Harsh will reminisce about his experiences in the development of the elements that were used in the first Shuttle flight.

CPR training

There has been some confusion regarding cardiopulmonary resuscitation (CPR) training at the Marshall Center. Some employees are starting to think CPR is mandatory, and the trained person must post a sign outside their office. There is no requirement for either the training or posting a sign at Marshall — it's strictly voluntary. CPR is administered as a "Good Samaritan" act. The Center offers periodic CPR training as a community service. For more information, call Joyce Eagan at 544-3996.

Breast cancer awareness

A breast cancer awareness "lunch and learn" workshop will be held from 11 a.m.-noon April 11 in Bldg. 4200, room P110. NASA government and contractor employees may attend. For reservations, call Rita Evans-McCoy at 544-7507.

Environmental awareness

April has been designated as Environmental Awareness Month at the Marshall Center. The 2001 Earth Day theme, "2001: An Earth Odyssey," reminds us that we are on an adventurous journey through space, and the Earth is our spaceship which has limited resources. How we use those resources determines the quality and length of the journey.

Future direction of ASTP

Steve Cook, deputy manager of NASA's Advanced Space Transportation Program (ASTP), will present an overview on the future direction of ASTP to interested Marshall team members from 1:30-2:30 p.m. April 11 in Bldg. 4200, room P110. This includes a new focus on hypersonics — propulsion, airframe and flight vehicles, in-space propulsion technologies, and long-term propulsion research.

Health Odyssey 2001

The fourth annual Health & Fitness Expo will be from 10 a.m.-2 p.m. April 18 at the Bldg. 4752 north structure. A variety of vendors and exhibitors from the medical and health fitness community will display products attendees may try and also buy. The Expo will also include Health & Fitness demonstrations and the ever-popular "Annual Walk for the Health of It" which begins at 11 a.m. Directorates are encouraged to participate in this inter-directorate competition; your contractors should join your group. The special "Golden Shoe" trophies will be awarded to the directorate having the most participants. Last year's winner was the Space Shuttle Projects Office. A trophy is also presented to the directorate having the highest percentage of participants in the walk. Last year that award went to the Chief Counsel Office. Door prizes will be awarded. It will be a casual dress day. Bring your walking shoes and let's continue our quest to make Marshall a healthier workplace.

Earth Week activities

Earth Week activities at Marshall will be held April 16-20. This year's theme is 2001: An Earth Odyssey. Besides environmental, recycling and energy displays in the lobby of Bldg. 4200, there will be a tree planting ceremony from 10-11 a.m. April 19 on the north side of Bldg. 4619.

Miscellaneous

Southern Wake-up

Southern Wake-up Espresso Coffee Bar in Bldg. 4203 will celebrate its one-year anniversary Tuesday and Wednesday. Complimentary cake and reduced price drinks will be offered. On Wednesday, the cafeteria and the coffee bar will offer reciprocal discounts to patrons. Show your coffee bar receipt in the cafeteria and get a 10 percent discount on your purchase. Show your cafeteria receipt at the coffee bar and get 50 cents off a beverage. Southern Wake-up is open 7 a.m.-3 p.m. Monday-Thursday and 7 a.m.-2 p.m. on Friday.

NASA Exchange

NASA goes to the Stars

The NASA Exchange is sponsoring the Huntsville Stars' opening night game against West Tennessee Diamond Jaxx at 7:05 p.m. April 13 at Joe Davis Stadium in Huntsville. Tickets are available through admin officers, the NASA Exchange and the Government and Community Relations Department in Bldg. 4200, room 828. Each ticket will admit up to four people. The free general admission tickets to the game may be used toward the purchase of upper or lower box seats for the game by visiting the Stars office prior to the game or at the Stars box office on the night of the game. Trade-up value on the free tickets is $4 per person. Upper and lower box seat tickets are regularly $7 each. Parking is $4. Marshall team members are needed to distribute NASA materials to attendees at the game. If you would like to volunteer, send an e-mail to rosa.kilpatrick@msfc.nasa.gov by Monday.

Employee Ads

Miscellaneous

★ Web TV unit, wireless keyboard, Canon BJC250 Bubble-Jet printer, Web TV for Dummies Book, $300. 830-9033
★ Coffee table, teak w/tile, $100 obo; entertainment center, holds 27" TV, VCR, stereo and storage, $75 obo. 751-2460
★ TV entertainment center, holds up to 27" TV and audio/video equipment, not solid wood, can deliver, $100 obo. 325-6000
★ 1995 Stratos bass boat, 17'8", w/150HP motor, garage kept, many extras. 796-2278
★ John Deere lawn and garden tractor w/ mower deck, 10HP, asking $700. 883-8664
★ Sofa, 3-cushion length with padded arms and wooden feet, 2 yrs. old, $150 obo. 464-3300
★ Peavey, 118-SUB PA cabinets, 300W, 8ohms, $300 pair. 829-0673
★ Magnavox TV, digital control system , stereo sound, 25" screen, $150. 351-1204
★ Sony stereo, 100w, dual cassette, turntable, CD player, tuner, equalizer, storage cabinet, $150. 895-9315
★ Huffy portable adjustable basketball goal, $65. 533-5942
★ 1990 Suzuki GS500E 2 cyl. street motorcycle, red w/white wheels, 8K miles, $1,500. 508-8117/880-5287
★ Little Tykes desk, $60; large dog kennel, $40; 2-tennis rackets, $30; oak TV stand, $50. 851-0556
★ 1992 Suzuki motorcycle, GSF-400N Bandit, red, 14K miles, $2,200. 859-0729
★ Sofa, $200 obo; Gold's home gym & accessories, $300; Batman comics, 200 issues, 1987-1992, $150 obo. 464-3300

Vehicles

★ 1997 Saturn SL, gray, 4-door. 5-speed, power steering, am/fm cassette, 115K miles, $4,995. 551-0276
★ 1997 Mazda B2300 SE, 43K miles, 5-speed, white, AC, bedliner, alloy wheels, $7,500. 851-2625
★ 1987 Ford Tempo, 4-door, automatic, one-owner, 110K miles, $1,250. 772-9925
★ 1991 Cadillac Seville, leather interior, full power, A/C w/warranty, cloth top, 122K miles, $5,200 obo. 882-7353
★ 1989 Buick Park Avenue, low mileage, many options, $3,400. 534-7791/656-8676
★ 1980 Chevy Suburban, new engine, warranty, 4WD, tow package, $3,500. 881-8565
★ 1994 Grand Caravan LE, dual airbags, ABS, rear A/C, $6,500. 519-7627
★ 1974 Ford Bronco, 4x4, 302 w/3-speed, new tires, $4,750 obo. 837-1405
★ 1994 Ranger XLT, white, 5-speed, V-6, air, good tires, 104K miles, $4,600 obo. 355-7896
★ 1966 Ford F100, V-8, (352 CI), 3-speed, short wheelbase, white on black, $3,500. 722-4767
★ 1997 Buick, Park Avenue, white, 49K miles, one-owner, $13,500; 2000 Tahoe, gold, low miles, $29,500. 837-5113
★ 1993 Buick Century, silver, auto, a/c, 160K miles. Great condition. $4,500. 828-6158

Found

★ Phone case, Bldg. 4200. Call 544-4758 to identify/claim

Trade

★ Dish 500 satellite system under 1 yr. old for a 17" or 15" SVGA monitor in excellent condition. 682-5181

Wanted

★ Utility trailer, 4'x8' or larger. 232-1171
★ Used 4' finish mower for compact tractor w/3 point hitch. 837-1405

Courtesy photo

Zone wins basketball title

The Zone basketball team won the 2000-2001 MARS Division 1 Basketball League Tournament Championship March 22. Team members are: front row from left: Carlos smiley, James Young, Adrian Wilson, Sammy Jackson and Mark Harrison. Back row from left: Howard Nelson, coach; Dwight England, Calvin Tubbs, John Jupin, Brad Mason and Gary Matthews. Bob Gillis is not pictured.

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